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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,812	10/24/2000	Galen C. Hunt	MS1-547US	4273

22801 7590 01/26/2007	EXAMINER	
LEE & HAYES PLLC	KANG, PAUL H	
421 W RIVERSIDE AVENUE SUITE 500		
SPOKANE, WA 99201	ART UNIT	PAPER NUMBER
	2144	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/26/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

	Application No.	Applicant(s)
Office Action Summary	09/695,812	HUNT ET AL.
	Examiner	Art Unit	
	Paul H. Kang	2144	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 November 2006</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,3-25 and 74-77* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) *15-25 and 77* is/are allowed.

6) ☒ Claim(s) *1,3-14 and 73-76* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>24 October 2000</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/20/06</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Examiner Michael Delgado is no longer assigned to the present patent application. This

application is now assigned to Examiner Paul H. Kang. In examining this patent application, full

faith and credit has been given to the search and action of the previous examiner. MPEP §

719.05.

Allowable Subject Matter

2.   Claims 15-25 and 77 are allowed. The prior art of record fails to teach or suggest

managing network traffic based on network filters received from one or more cluster operations

management consoles and remote consoles, wherein the management component gives

precedence to those from cluster operations management consoles over that from remote

consoles.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-8, 10-12, 14 and 73-75 are rejected under 35 U.S.C. 103(a) as**

being unpatentable over US 6,801,937 to Novaes et al in view of US 6,519,615 to Wollrath et al..

5.   In claim 1, Novaes teaches the invention substantially as claimed. Novaes teaches a multi-tiered management architecture comprising (Novaes, Fig 1): an application development tier "Resource Manager Component" at which applications are developed for execution on one or more computers (Novaes, Col 6, lines 30-41); an application operations tier "Group Service Component" at which execution of the applications is managed (Novaes, Col 6, lines 19-29).

However, Novaes does not explicitly teach a cluster operations tier to manage the operation of the computers without concern for what applications are executing on the one or more computers. Novaes teach about a distributed system in which resources (clusters) are shared among a group of entities (Novaes, Col 1, lines 48-60).

In the same field of endeavor, Wollrath teaches about the benefit of distributed computing as to the efficiency and effectiveness (Wollrath, Col 2, lines 40-48). Wollrath teaches about challenge of operating a distributed system, similar to the system of Novaes, in which resources are shared among multiple computers (Wollrath, Col 2, line 58-Col 3, line 15). Wollrath teaches an improve approach to distributed computing by providing a leasing arrange between the multiple computers (clients) and a garbage collection system (cluster management tier). Despite a network failure, the garbage system is able to function properly without concern for the application on the one or more computers (Wollrath, Col 4, line 43-Col 5, line 2).

It would have been obvious at the time of the invention for some one of ordinary skill to improve on the invention of Novaes by using the garbage collection system of Wollrath in order to effectively manage resources (clusters) during network failure and recovery.

Novaes combined with Wollrath further teach about a management architecture wherein the cluster operations tier is responsible for securing a computer cluster boundary to prevent a plurality of other computers that are not part of the computer cluster from, accessing the one or more computers in the computer cluster (boundaries are established by assigning access rights during lease periods; Wollrath, Col 8, lines 7-22 and col. 8, line 51 – col. 9, line 15) (Novaes, Col 9, lines 9-16). The unique identifier prevent outside clients from accessing the cluster in question.

6.   In claim 3, Novaes combined with Wollrath, teaches about a management architecture as recited in claim 1, wherein the application operations tier is responsible for securing sub-boundaries "grouping" within the computer cluster boundary to restrict communication between computers within the computer cluster (Novaes Col 6, lines 19-29).

7.   In claim 4, Novaes combined with Wollrath, teaches about a management architecture as recited in claim 1; wherein the application operations tier is implemented at an application operations management console at a location remote from the one or more computers (Novaes, Fig 4 and Col 4, lines 14-25). Here the processing node can be on different computer, which include a remote computer.

8.   In claim 5, Novaes combined with Wollrath, teaches about a management architecture as

recited in claim 1, wherein the cluster operations tier is implemented at a cluster operations

management console located at the same location as the one or more computers (Novaes, Fig 6

and Col 4, lines 14-25).

9.   In claim 6, Novaes combined with Wollrath, teaches about a management architecture as

recited in claim 1, wherein the application operations tier monitors execution of application

processes on the one or more computers and detects failures of the application processes (Novaes

Col 6, lines 25-30) and (US 5, 748,958 Novaes Col 3, lines 15-40) incorporated by reference.

10.   In claim 7, Novaes combined with Wollrath, teaches about a management architecture as

recited in claim 1, wherein the application operations tier takes corrective action in response to a

software failure on one of the computers (Novaes Col 6, lines 25-30) (US 5, 748,958 Novaes Col

3, lines 15-40) incorporated by reference.

11.   In claim 8, Novaes combined with Wollrath, teaches about a management architecture as

recited in claim 7, wherein the corrective action comprises re-booting the computer (Novaes Col

5, lines 40-50) (Novaes Col 7, lines 50-65) (Novaes Col 17, lines 30-40). In the situation of a

software failure (lock up), the node has to be reconfigured, which is accomplished by running the

bootstrap program to accomplish the task. This process is well known in the art as a software

watchdog program, which requires the rebooting of the hardware in question.

12.   In claim 10, Novaes combined with Wollrath, teaches about a management architecture

as recited in claim 1, wherein the cluster operations tier monitors hardware operation of the one

or more computers and detects failures of the hardware (Novaes Col 6, lines 5-20) (Novaes Col

8, lines 15-20).

13.   In claim 11, Novaes combined with Wollrath, teaches about a management architecture

as recited in claim 1, wherein the cluster operations tier takes corrective action in response to a

hardware failure of one of the computers (Novaes Cot 6, lines 25-30) (Novaes Cot 7, lines 55-65)

(US 5, 748,958 Novaes Col 3, lines 15-40) incorporated by reference. Software depends on

hardware, therefore a failure in hardware result in a failure in software. The recovery process of

the Group Service component provides the corrective action need to recover from a hardware

failure.

14.   In claim 12, Novaes combined with Wollrath, teaches about a management architecture

as recited in claim 11, wherein the corrective action comprises re-booting the computer (Novaes

Col 5, lines 40-50) (Novaes Col 7, lines 55-65) (Novaes Col 17, lines 30-40).

15.   In claim 14, Novaes combined with Wollrath, teaches about a management architecture

as recited in claim 11, wherein the one or more computers are situated in one or more clusters at

a co-location facility (Fig 1).

16.   In claim 73, Novaes combined with Wollrath, teaches about a multi-tiered computer

management architecture comprising (Novaes, Fig 4 and Col 4, lines 10-25): a first tier

corresponding to an owner or lessee of a computer (Novaes, Fig 4, operating system instance); a

second tier, implemented by a cluster operations management console, corresponding to a

hardware operator that is to manage hardware operations of the computer but not application

software operations of the computer (Novaes, Fig 4, DCM Process; See also Wollrath, col. 2,

lines 40-48, col. 2, line 58 – col. 3, line 15 and col. 4, line 43 – col. 5, line 2); a third tier,

implemented by an application operations management console, corresponding to a software

operator that is to manage software operations of the computer but not hardware operations of

the computer (Novaes, Fig 4, Group Service Process; col. 6, lines 25-30); and a fourth tier

corresponding to the owner or lessee, wherein the owner or lessee operates in the fourth tier

except when revoking the rights of the hardware operator or software operator (Novaes, Fig 4,

Resource Manager Process) (Covered in claim 1).

17.   In claim 74, Novaes combined with Wollrath, teaches about an architecture as recited in

claim 73, wherein the cluster operations management console at a location remote from the

computer (Novaes Col 4, lines 10-25). The modularity of the approach allows the each of the

tiers to operate without the restriction of location.

18.   In claim 75, Novaes combined with Wollrath, teaches about a architecture as recited in

claim 73, wherein the application operations management console at a location remote from the

computer (Novaes Col 4, lines 10-25). The modularity of the approach allows the each of the

tiers to operate without the restriction of location.

19.   **Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US**

6,801,937 to Novaes et al. and US 6,519,615 to Wollrath et al. in view of US 6,801,937 to

Hipp.

20.   In claim 9, Novaes combined with Wollrath, teaches all the limitation but does not

explicitly teach about notifying an administrator that a failure has occurred.

In the same field of endeavor, Hipp teaches a management architecture "remote

management system 70" as recited in claim 7, wherein the corrective action comprises notifying

"sound an alarm" an administrator of the failure (Hipp, Col 22; lines 55-65).

The administrator of a network is most knowledgeable about the operation of a network

that he or she is in charge of, and in the case of a failure, possesses the skill that is needed to fix

the problem. Down time in a network has to be kept to a minimum and in order to satisfy this

requirement it is wise to notify the person that is most knowledgeable and capable of fixing the

problem.

It would have been obvious at the time of the invention for some one of ordinary skill to

send a notification of a failure to an administrator in order that the problem can be remedy in the

shortest time possible.

21.   In claim 13, Novaes combined with Wollrath, teaches about a management architecture

as recited in claim 11, wherein the corrective action comprises notifying a co-location facility

administrator (Covered in claim 9).

22.   Claims 20, 24 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over

US 6,801,937 to Novaes et al and US 6,519,615 to Wollrath et al., and further in view of US

6,529,953 to Van Renesse.

23.   In claim 20, Novaes combined with Wollrath, teaches all the limitation but does not

explicitly teach about using private and public key to support tunneling.

        Van Renesse teaches about a system as recited in claim 19, wherein each node in each

node cluster "all the node that stores MIBs" is configured with a private key that allows the node

to decrypt communications that are received, in a form encrypted using a public key, from the

application operations management console "authorized nodes that maintain the MIB" associated

with the customer that corresponds to the node cluster (Van Renesse, Col 7, lines 34-45 and Col

7, lines 50-60).

        In applicant invention different clusters belonging to different users are located on the

same physical storage. To prevent the unauthorized use of a cluster out side the assigned group, a

system of tunneling using private and public keys for encryption and decryption is used.

Unauthorized user if given access can corrupt the clusters and thus render it useless. Like the

applicant, Van Renesse discloses the need for security to prevent important storage spaces (MIB

storages like applicant's clusters) from being access by interloper. The success in maintaining

group state of Novaes invention is hinged on the security that only the members of the group in question are allowed to make changes. Without this security boundary, outside entities would modify the group state, which will cause the system to crash. By adding, the additional security of public/private keys, one is better able to guarantee that only authorized members are allowed to do these critical changes.

It would have been obvious at the time of the invention for some of ordinary skill to use private and public keys system to protect the group state of Novae invention from being access and corrupted by unauthorized users.

24.   In claim 24, a system as recited in claim 15, wherein each node in each node cluster is configured with a private key that allows the node to decrypt communications that are received in a form encrypted using a public key, from the cluster operations management console. (covered in claim 20).

25.   In claim 76, Novaes combined with Wollrath, teaches about an architecture as recited in claim 73, further comprising using a plurality key pairs, each key pair including a private key and a public key, to securely communicate between the computer and a management device corresponding to the hardware operator, as well as between the computer and a management device corresponding to the software operator(Covered in claim 1) (covered in claim 20).

Response to Arguments

26.   Applicant's arguments with respect to claims 1, 3-25 and 74-77 have been considered but

are moot in view of the new ground(s) of rejection. The applicants argued in substance that the

prior art of record fails to teach or suggest "a cluster operations tier to manage the operation of

the computers without concern for what applications are executing on the one or more

computers" and further that the garbage collection system of Wollrath relied upon to teach this

limitation dose not teach securing a computer cluster boundary to prevent a plurality of other

computers that are not part of the computer cluster from accessing the one or more computers in

the computer cluster.

The examiner respectfully disagrees. As set forth in the new grounds of rejection above,

boundaries are inherently established by establishing exclusive rights to leased network

resources.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
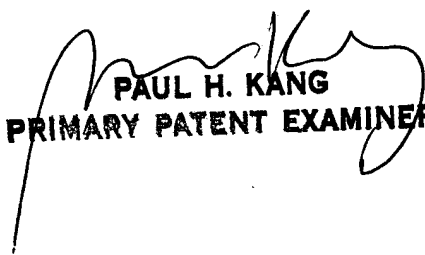
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Paul H. Kang whose telephone number is (571) 272-3882. The

examiner can normally be reached on 9 hour flex. First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, William Vaughn can be reached on (571) 272-3922. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PAUL H. KANG
PRIMARY PATENT EXAMINER